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Low-energy neutrino-electron scattering as a Standard Model probe: the potential of LENA as case study

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Abstract content

Several proposals for studying neutrinos with large detectors are currently under discussion. We suggest that they could provide a precise measurement of the electroweak mixing angle as well as a probe for new physics, such as non-standard neutrino interactions (NSI), and the electroweak gauge structure. We illustrate this explicitly for the case of the LENA proposal, either with an artificial radioactive source or by using the solar neutrino flux.

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